

Work Order ID: 152875

Tuesday, November 08, 2016 8:30:39 AM

152875

Page 1

Item ID: 646.9701 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Cutter Sub Assembly
Start Date: 11/10/2016 Start Qty: 3.00 ***3*** Cust Item ID:
Required Date: 11/15/2016 Req'd Qty: 3.00 ***3*** Customer:
Reference:

Approvals: Process Plan: DAS 21 Date: NOV 08 2016 Tooling: _____ Date: _____ Run Start ***NR1***
QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
646.9700	REV D2								
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120		0.00							
120									
Small Fab	Memo	0.12							
Small Fab	Assemble as per dwg and apply loctite 598 on all faying surfaces per note .								
	A/R RTV LOCTITE 598: <u>135479</u>								
	exp. date: <u>04/18</u>								
130	QC5- Inspect part completeness to step on W/O	0.00							
130									
QC	Memo	0.01							
Quality Control									

3 DAS 6 9-89 DEC 05 2016
3x 16/12/12
3 DAS 38 9-89 DEC 13 2016

DA
3
9

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube ☐</td> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																				
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Work Order ID 152875***152875***

Page 2

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140

Identify as per dwg & Stock Location: CLK 107 0.00***140***

Packaging

Memo

0.00

Packaging

IDENTIFY AS PER IAW MPP-120

DEC 13 2016

150

QC21- Final Inspection - Work Order Release 0.00

150

QC

Memo

0.05

Quality Control

DEC 14 2016

16.12-13

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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OTHER :																																																																									

Picklist Print

Tuesday, November 08, 2016 8:30:41 AM

Page 1

Work Order ID: 152875

152875

Parent Item: 646.9701

646 9701

Parent Item Name: Cutter Sub Assembly

Start Date: 11/10/2016

Required Date: 11/15/2016

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP REV:A 12.08.13 NEW ISSUE DD VERF:JFS
:B AS PER REV D 16-03-07 JLM VERIFIED BY:JFS

IPP REV

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
646.9710 *646 9710* Body		Manufactured	No				Each	8.0000		3		DEC 05 2016	DAS 6 9-89

** 150/27

Location	Loc Qty	Loc Code
cck012	8	
142487	1	
147271	7	

646.9711 *646 9711* Blade		Manufactured	No			110	Each	52.0000	2	6		DEC 05 2016	DAS 6 9-89
--	--	--------------	----	--	--	-----	------	---------	---	---	--	-------------	------------------

**

Location	Loc Qty	Loc Code
CCK106	12	
147263	12	
CCK108A	40	
148546	10	
150119	30	

MS27039-08-19 *MS27039-08-19* Screw		Purchased	No			110	Each	315.0000	6	18			DAS 6 9-89
--	--	-----------	----	--	--	-----	------	----------	---	----	--	--	------------------

** 13699

Location	Loc Qty	Loc Code
GA	182	
m135948	182	
ST277	133	
m135865	33	
m136042	100	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Picklist Print

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Work Order ID: 152875

152875

Parent Item: 646.9701

646.9701

Parent Item Name: Cutter Sub Assembly

Start Date: 11/10/2016

Required Date: 11/15/2016

Start Qty: 3.00

Required Qty: 3.00

NAS1149FN832P

Purchased

No

110

Each

1,519.000

12

36

NAS1149FN832P

DEC 05 2016

Washer

Location

Loc Qty

Loc Code

GA

1389

M133769

89

M135058

1300

ST263

130

M135603

130

MS21042L08

Purchased

No

110

Each

1,070.000

6

18

MS21042L08

DAS
6
9-89

Nut

Location

Loc Qty

Loc Code

GA

50

m135274

50

ST303

1020

m135672

20

m135766

200

m135948

300

m135978

500

DEC 05 2016

18

DQA: _____ Date: _____



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QA Closed: _____ Date: _____

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OTHER : _____					



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05360

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY J. BECKER

DATE: 03/24/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY: ENGR *[Signature]*

MFG *[Signature]*

QC *[Signature]*

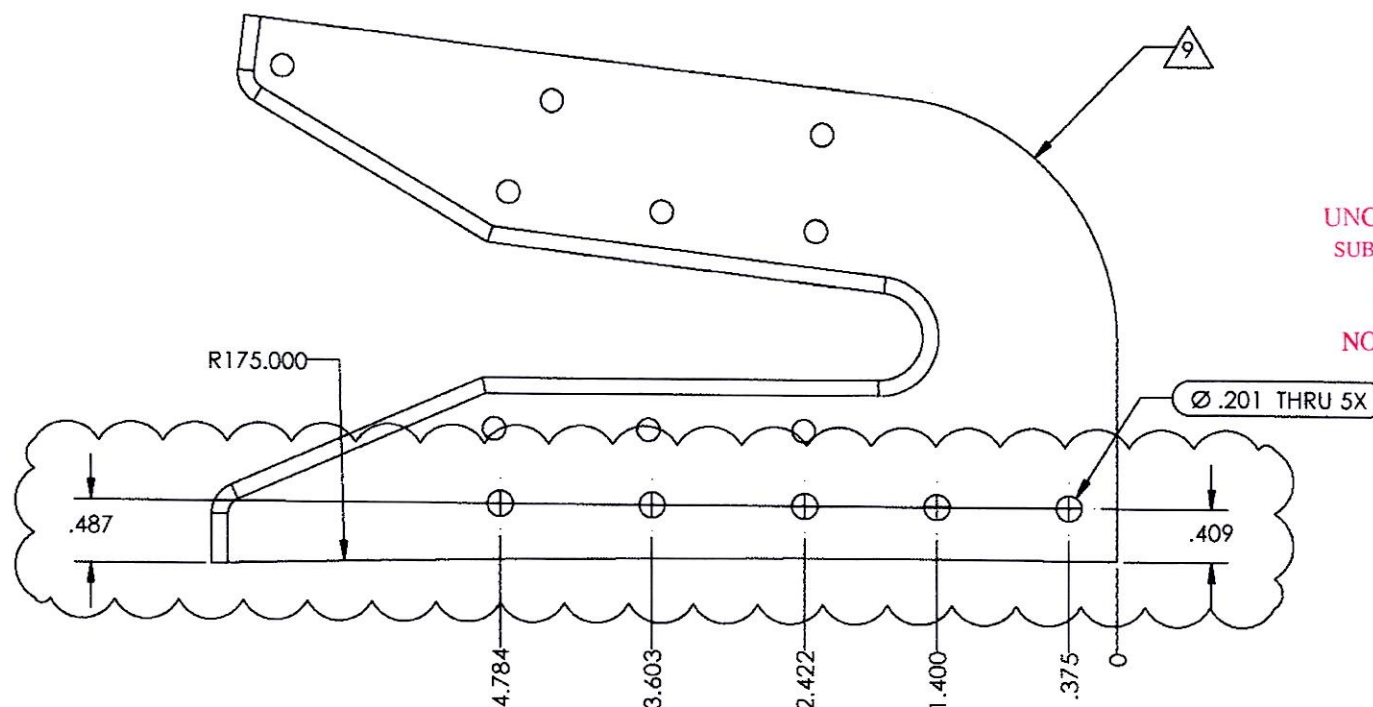
EFF. CURRENT ORDER

REASON: REVISED DIMENSIONS

ECR: N/A

ACTION ITEM:
1.

SHEET 7, ZONE C3 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 152875 MJS
16-11-08

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR.

MFG

QC

EFF.

CURRENT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

1.

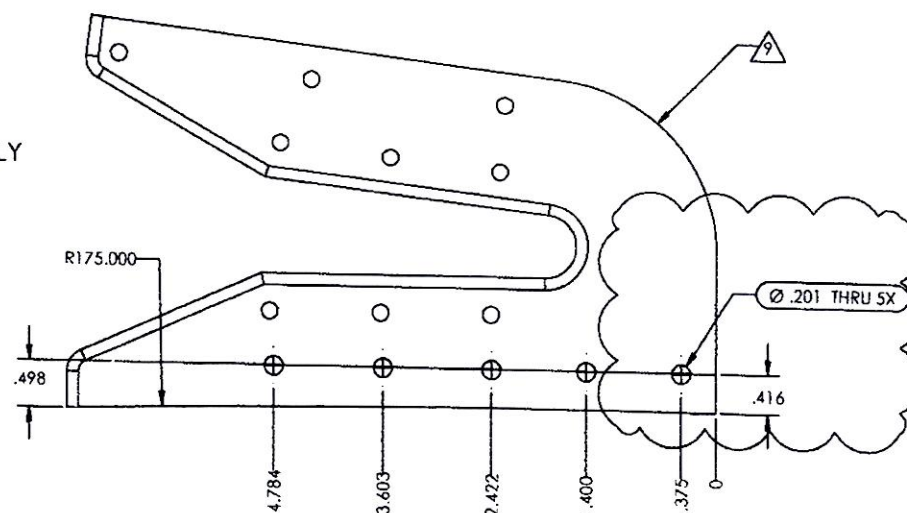
SHEET 1, ZONE A6 IS:

NOTES:

IS

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

SHEET 7, ZONE C5 IS:



DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

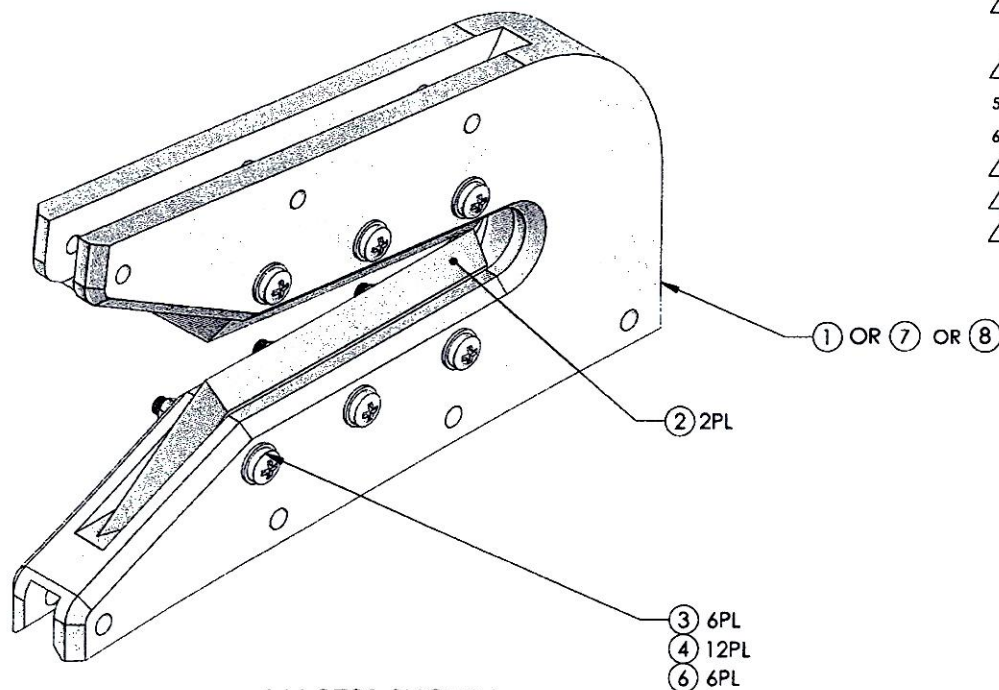
☐ YES ☒ NO

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE REVISION - P92		INC
INC	INITIAL RELEASE	03/21/09	P. BRAVO
A	INCORPORATED ECN 02744, 02838, 02912	06/06/13	P. BRAVO
B	INCORPORATED ECN 02967	07/03/13	P. BRAVO
C	INCORPORATED ECN 04039	08/06/13	P. BRAVO
D	INCORPORATED ECN 05329	02/26/16	P. BRAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



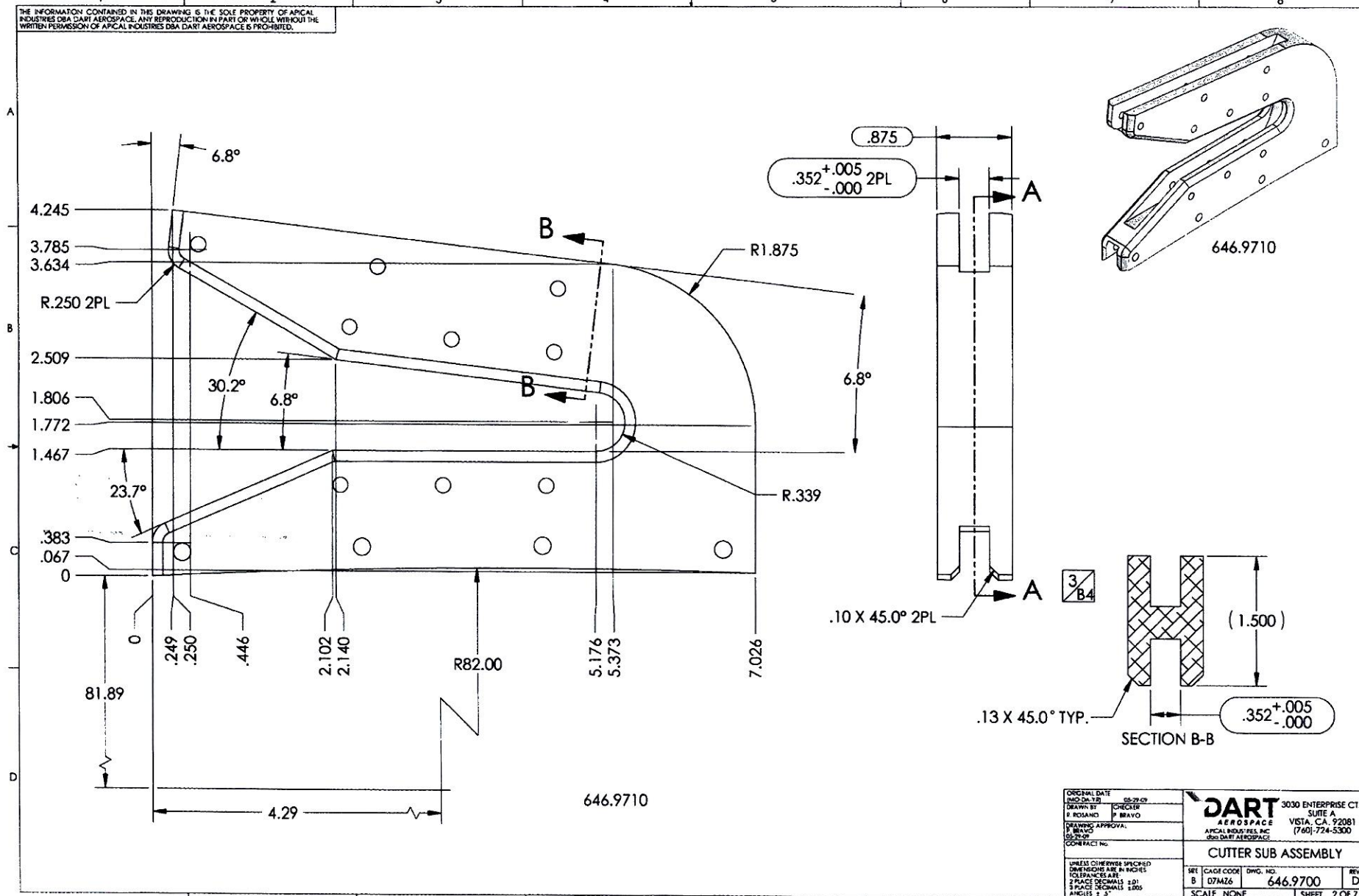
646.9701 SHOWN
646.9702 & 646.9703 TYP

UNINCORPORATED ECN(S)

05345, 05360,

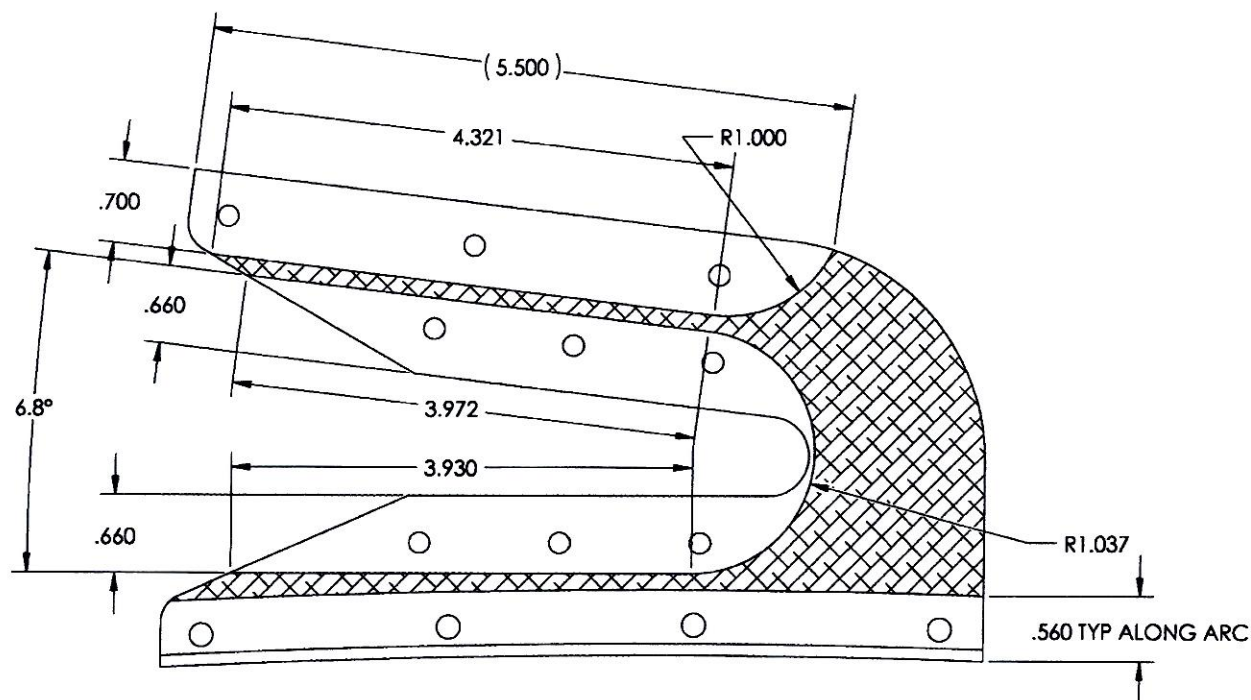
1			8	646.9713	BODY			
	1		7	646.9712	BODY			
6	6	6	6	601.1541	LOCKNUT	MS21042-08		
A/R	A/R	A/R	5	601.2045	RTV, LOCITE 598			
12	12	12	4	601.2764	WASHER	NAS1147HMS3P		
6	6	6	3	601.2765	SCREW	MS27039-0819		
2	2	2	2	646.9711	BLADE			
			1	646.9710	BODY			
X				646.9703	CUTTER SUB ASSY			
	X			646.9702	CUTTER SUB ASSY			
		X		646.9701	CUTTER SUB ASSY			
9703	9702	9701	FIND #	PART #	DESCRIPTION	MATL	SPEC.	
QTY								
PARTS LIST								
NEXT ASSY (S)				ORIGINAL DATE 05-25-09				
646.9600				DRAWN BY R. ROSANDI CHECKED P. BRAVO				
				DRAWING APPROVAL P. BRAVO				
				CONTRACT NO.				
				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 7 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°				
				CUTTER SUB ASSEMBLY				
				SCALE NONE				
				SHEET 1 OF 7				

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ORIGINAL DATE 08-28-79		3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY F. ROSANDI	CHECKED P. BRAVO	DART AEROSPACE APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DRAWING APPROVAL P. BRAVO		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ± .5°		MATERIAL B 07M26	REV. D
SCALE NONE		DWG. NO. 646.9700	SHEET 2 OF 7

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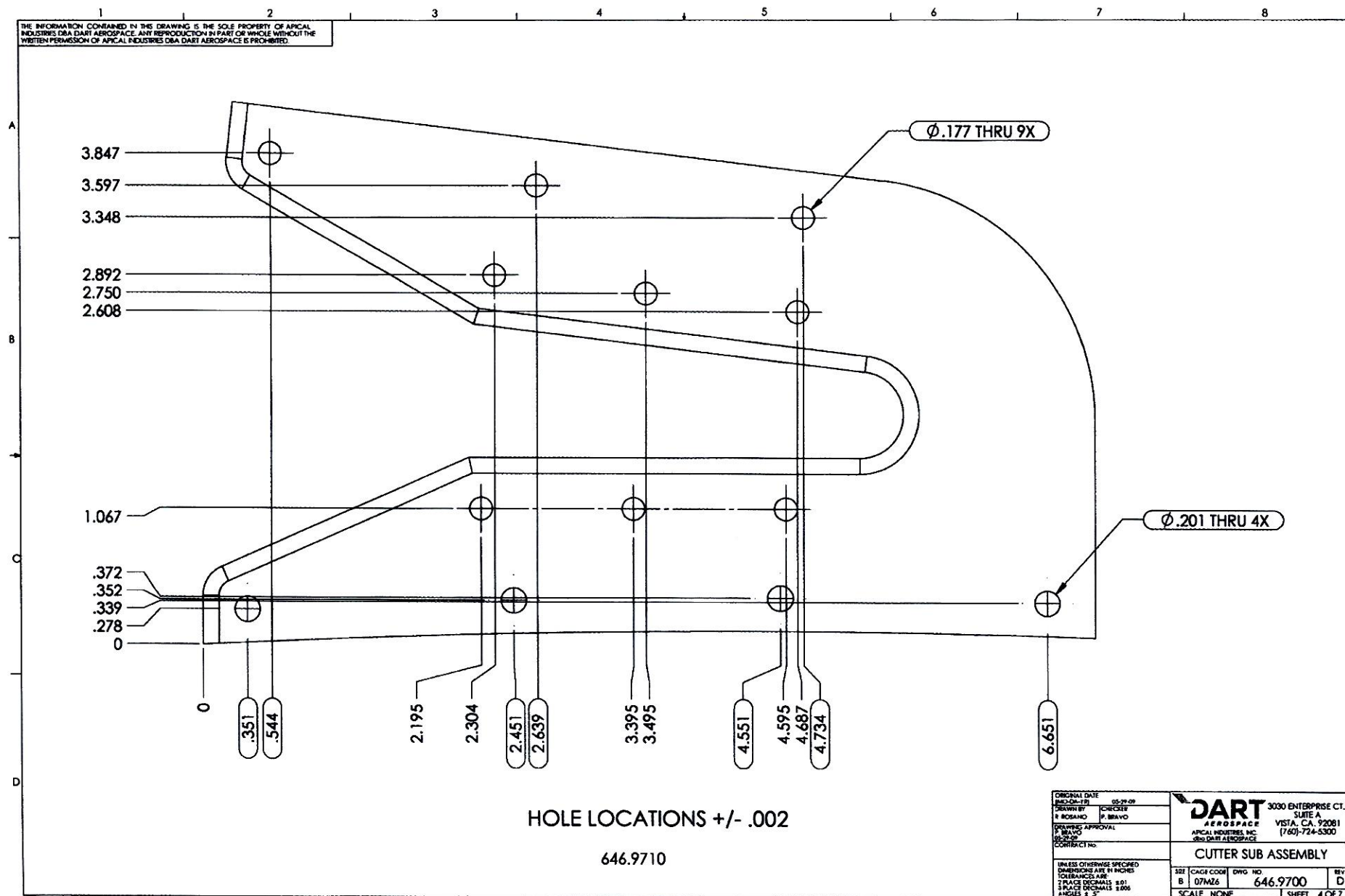


SECTION A-A $\frac{2}{C6}$

646.9710

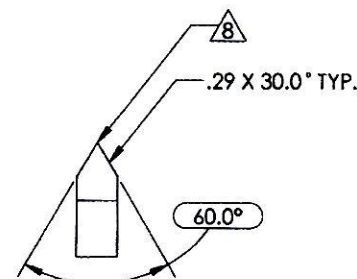
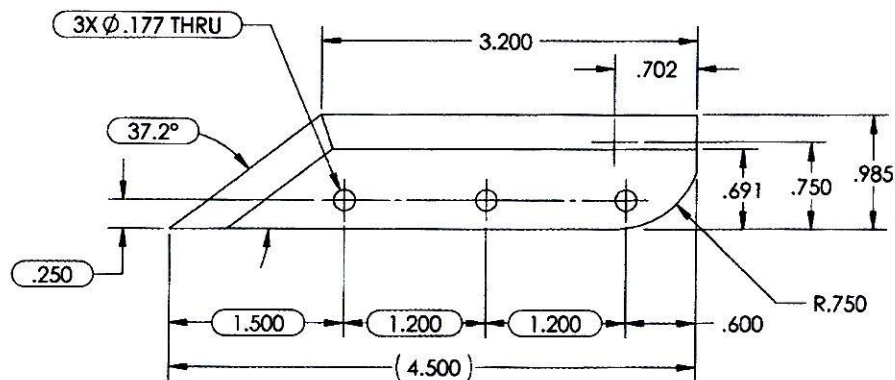
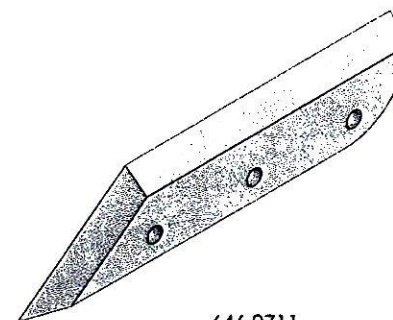
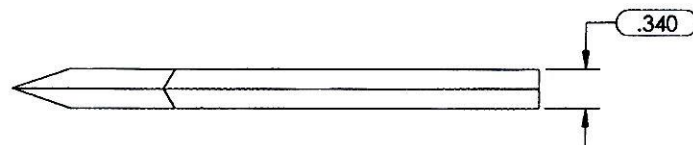
ORIGINAL DATE 06-28-09		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760) 724-5300	
DRAWN BY R. ROSANO	CHECKED P. BRAVO	DART AEROSPACE APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DRAWING APPROVAL R. BRAVO 06-28-09		CUTTER SUB ASSEMBLY	
CONTRACT NO.		SCALE NONE	SHEET 3 OF 7
UNITS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SER B	REV D
CAGE CODE 07M26		DWG. NO. 646.9700	

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ORIGINAL DATE: 05-29-09		3030 ENTERPRISE CT., SUITE A, VISTA, CA, 92081 (760)-724-5300	
DRAWN BY: R. BOSANO	CHECKED: P. BRAVO	DART AEROSPACE	
DESIGNED APPROVAL: P. BRAVO		APICAL INDUSTRIES INC. DBA DART AEROSPACE	
CONTRACT NO.		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ± 5°		3031 CAGE CODE: B 07M26	3032 DWG NO: 646.9700
SCALE: NONE		REV: D	SHEET: 4 OF 7

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646.9711

ORIGINAL DATE 10-28-79		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY R. ROSANO	CHECKED P. BRAVO	DART AEROSPACE APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DESIGNED P. BRAVO	APPROVED P. BRAVO		
CONTRACT NO.		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SEE CAGE CODE 8 07MZ6	DWG NO. 646.9700
SCALE NONE		REV. D SHEET 5 OF 7	

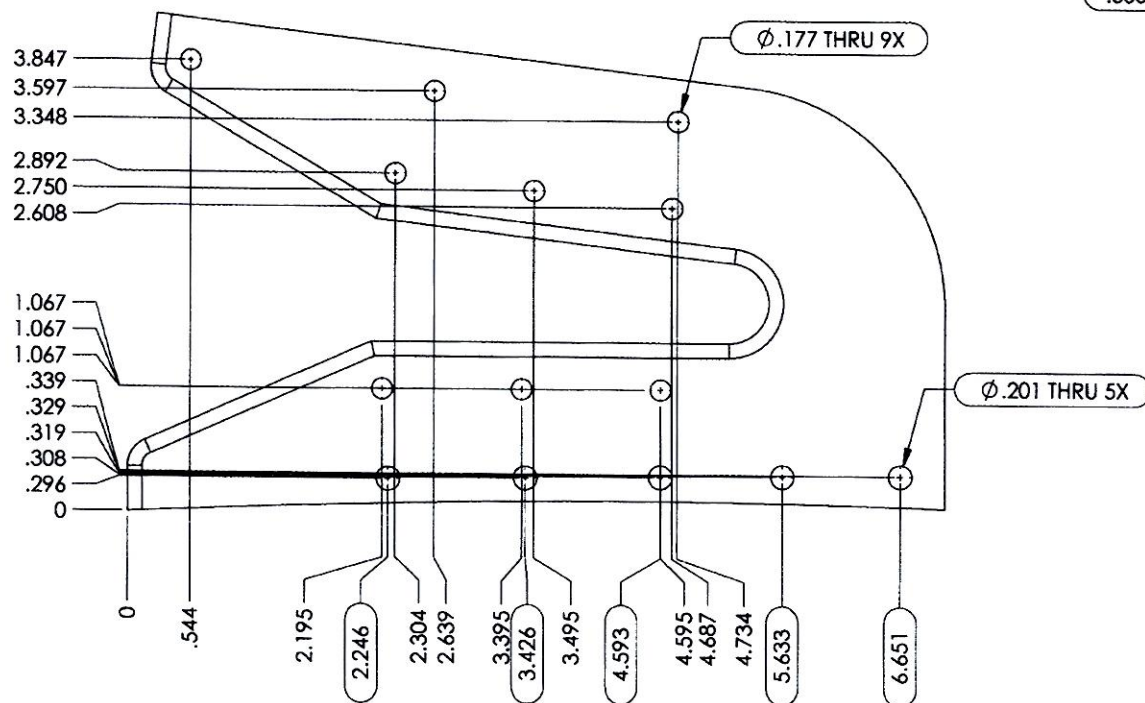
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.

A

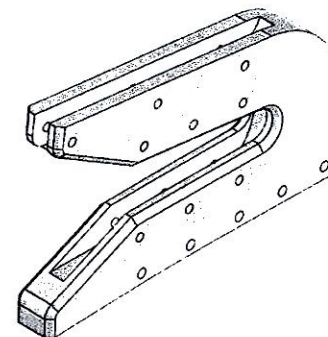
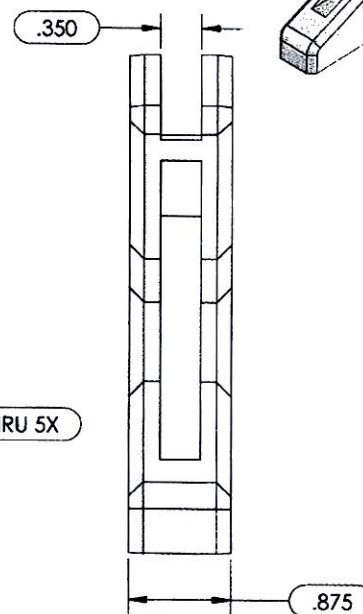
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C

D



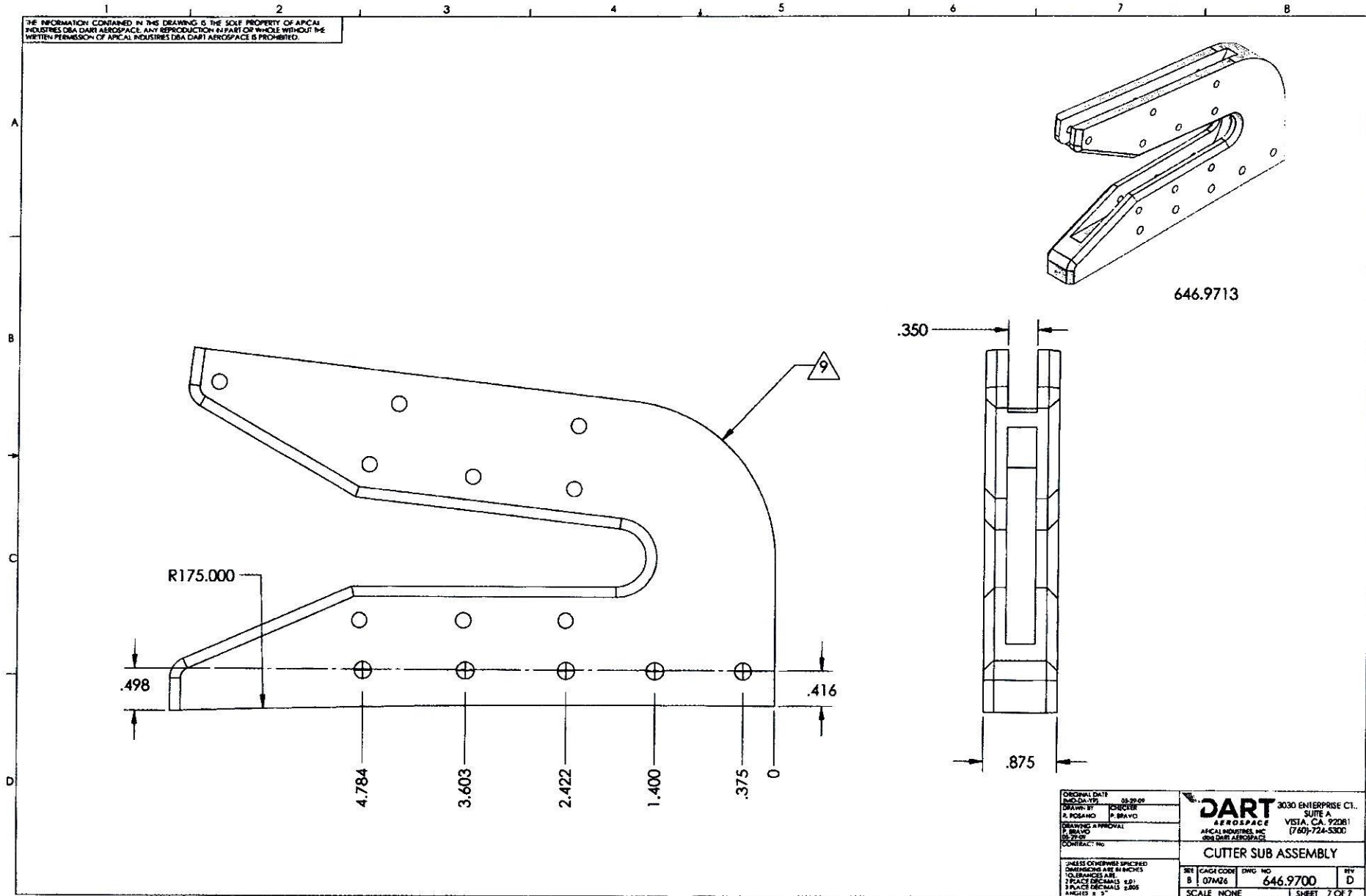
646.9712



646.9712 $\triangle 9$

ORIGINAL DATE 10-01-79		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY R. ROSANO		DART AEROSPACE APICAL INDUSTRIES, INC. dba DART AEROSPACE	
CHECKED BY P. BRAVO		CUTTER SUB ASSEMBLY	
DRAWING APPROVAL P. BRAVO 03-29-80		REV B	D
CONTRACT NO.		DWG. NO. 646.9700	SCALE NONE
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .001 ANGLES $\pm .5^\circ$		SHEET 6 OF 7	

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ORIGINAL DATE 03-27-09		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY A. POSANO		DART AEROSPACE APCAL INDUSTRIES, INC. DBA DART AEROSPACE	
CHECKED BY P. BRAYO		CUTTER SUB ASSEMBLY	
DRAWING & REVISION REV. 01		SCALE NONE	
CONTRACT NO.		SHEET 7 OF 7	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .010 2 PLACE DECIMALS .005 1 PLACE DECIMALS .005		REV B	REV D
SET B	CAGE CODE 07M26	DWG. NO. 646.9700	REV D